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by J. Clark Leith*

1 Introduction

1.1 In the three decades since Independence, Botswana's economy has grown rapidly, increasing GDP per capita many times over. This did not happen simply with all inputs and outputs growing at the same rates. Rather, the mix of inputs and outputs, and the output per unit of input, changed dramatically also. At Independence, economic activities were predominantly unskilled labour- and land-intensive, with little capital employed. The goods produced were mostly agricultural. In the intervening decades, the economy has become a much more intensive user of skilled labour, capital, and mineral resources. A major share of output now comes from the mineral sector, but in addition there are substantial sectors which are capital and/or skill intensive.

1.2 The rapid growth and the structural transformation are not unrelated: changing stocks of factor inputs have changed the production possibilities of the economy. This result has not been simply accidental. In the process, key policy choices have had major influences on the outcomes.

1.3 This paper is concerned about Botswana's growth, structural transformation, and the connection between the two. First, the growth of inputs is reviewed, followed by consideration of the growth of outputs. Then, the changing share of output is considered relative to the factor intensity of the sectors, to see how the changing structure of production relates to the factor intensity of production. This leads to a consideration of the relationship between inputs and outputs, namely productivity. Finally, some of the key policy choices which have influenced the results are reviewed.

1.4 Many of the data cited below only cover the national accounts years from 1974/75 through 1994/95.[1] This is because some key data sources do not provide the detail necessary to go back

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[1] The national income accounts use the year 1 July through 30 June.

further. Nevertheless, the growth and structural transformation which it has been possible to document in this shorter period of two decades are sufficiently dramatic to point towards conclusions which cover the full three decades of Independence.

2 Growth of Factor Inputs

2.1 There are several possible classifications which might be used to describe the factor inputs employed in any economy. By far the most common is the simple distinction between capital and labour. This is a useful start, but as will become evident, some further distinctions are critical in understanding the transformation of the Botswana economy.

2.2 Looking first of all at the growth of the labour force and the capital stock, the increase has been substantial. These two series for the period 1974/75 through 1993/94 are shown in Figure 1. (See Appendix for details of construction of the series.) Note especially that the capital stock has grown much faster than the labour force. While, the latter grew at an average rate of 2.76% per annum, which is rapid by most standards, the real capital stock was growing at 7.15% per annum. As a result, the capital intensity of production has increased dramatically.[2]

2.3 The change in the quality of the labour force over the period is also important. Precise measures are not easily constructed. However, Government spent heavily on improving access to education and health. This included heavy capital expenditure in the education and health sectors (which is incorporated in the capital stock data). Government recurrent spending on health and education (in constant prices) also grew rapidly, as may be seen in Figure 2.

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[2] Although the capital intensity of production increased most dramatically, over the past decade the share of income going to capital has not increased. (See Table 2 below.) A 40% factor share to capital is quite close to those found in many other economies around the world.

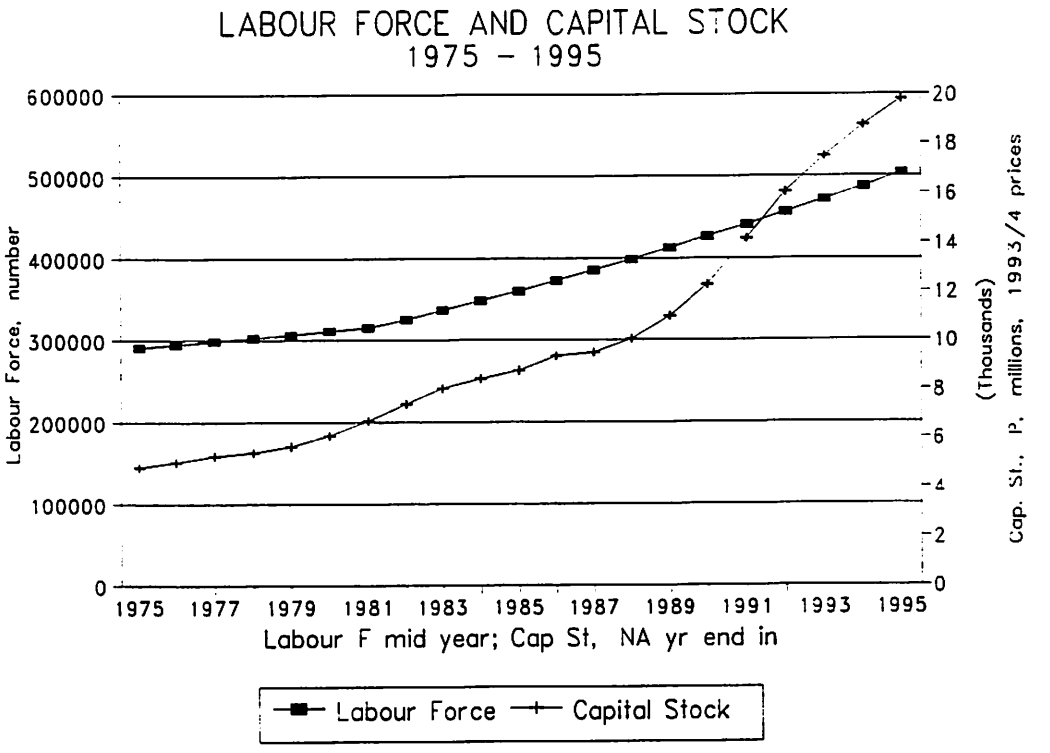

Figure 1

Note: The labour force data are for mid-calendar year, and the capital stock data are for the end of the national accounts year, which amounts to the mid-calendar year.

2.4 The result of these expenditures may be seen in a variety of indicators. A useful summary

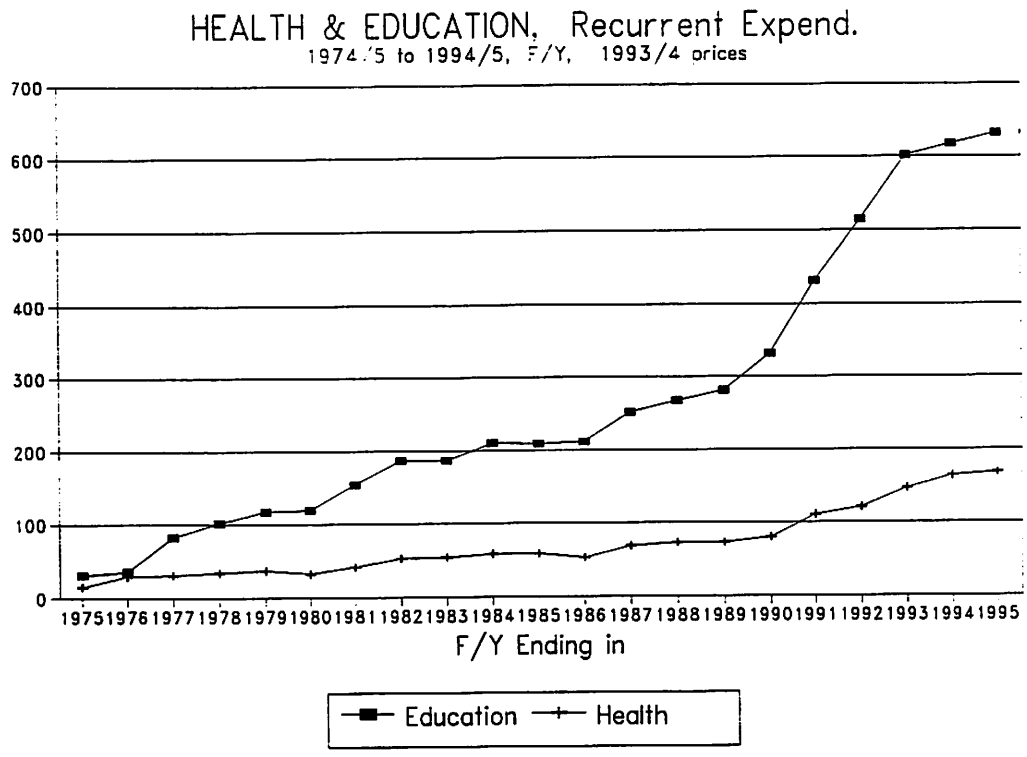

Figure 2

indicator of the change in health status is life expectancy at birth, which has risen to 65 years, from 50 years in 1970. The education status of the population is measured every census year. From these data it is possible to construct an average years of education of the population aged 15-64. The results, in Table 1, show a substantial increase, with a more than tripling from 1964 to 1991. This is all the more dramatic when it is recognised that the improvements in the averages of health and education status were occurring while the working age population (aged 15 to 64) was also growing at 2.76% per annum.

Table 1: Years of Educational Attainment, 1964 - 1991

Census Year	Years of Schooling
1964	1.46
1971	2.45
1981	3.11
1991	4.82

Source: calculated from Botswana C.S.O., Population Censuses

2.5 The improved educational status of the labour force, and the increasing capital intensity of production already noted, have resulted in a marginal increase in the share of factor payments going to skilled labour from 1985/86 to 1992/93, with a corresponding reduction in the share going to capital, while the share going to unskilled labour remained virtually constant.[3] (See Table 2.)

Table 2: Shares of Factor Payments to Capital, Skilled Labour, and Unskilled Labour; 1985/86 and 1992/93 (percentage)

	1985/86	1992/93
Capital	42.7	38.1
Skilled Labour	36.5	41.7
Unskilled Labour	20.8	20.3

Source: calculated from Botswana C.S.O., Social Accounting Matrices

[3] Note that to separate out mineral rents from factor payments to capital and labour in these calculations of factor shares, Government's mineral revenue (as an approximation of the mineral rents), was first deducted from total factor payments. Thus, the return to capital for the mineral sector includes only the depreciation component.

3 Growth of Output

3.1 A rapid increase in both the quantity and quality of inputs, in the absence of significant declines in productivity, would yield very rapid growth of outputs. For much of the post-Independence period, growth of output was indeed very rapid. This is illustrated in terms of aggregate output in Figure 3, where real GDP over the two decades 1974/75 through 1994/95 is shown.[4]

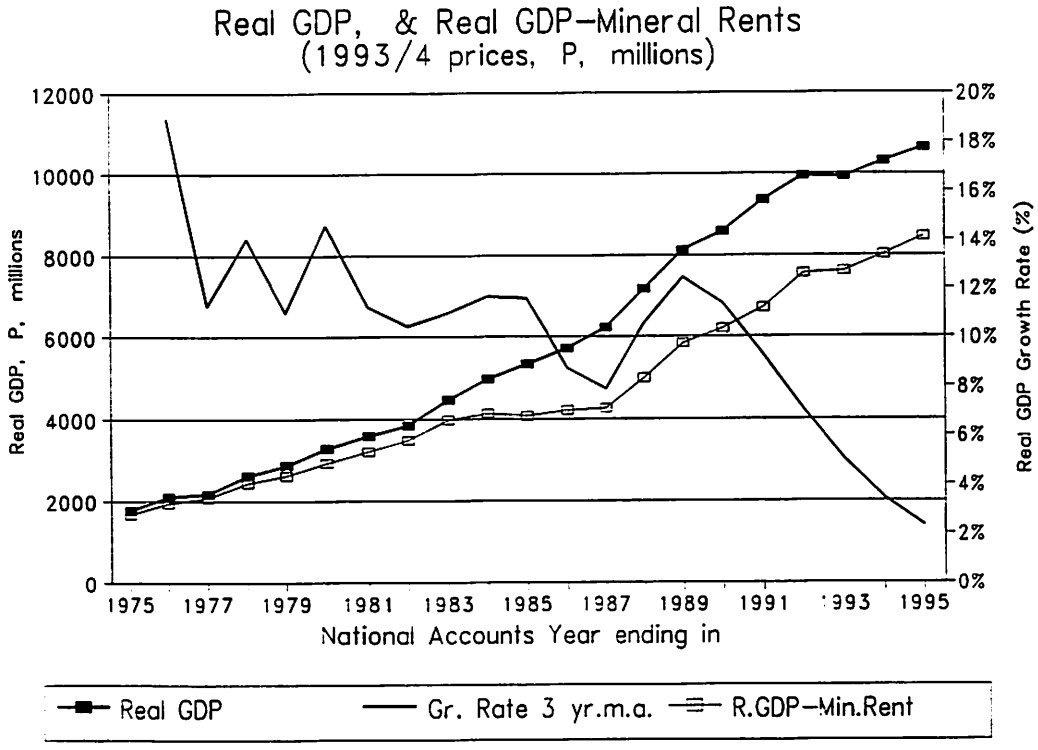

Figure 3

3.2 However, not all sectors of the economy shared in the rapid growth. Looking first of all at four critical sectors -- agriculture, mining, manufacturing, and Government -- it is evident in Figure 4 that there was a dramatic shift in sectoral shares of GDP. Agriculture and mining effectively swapped places. Agriculture shrank from 32% of GDP in 1974/75 to just over 4% in 1994/95; while mining

[4] The 3 year moving average growth rate is also shown, indicating a decline in recent years. We shall turn to this when we take up productivity issues below.

expanded from 8% to a peak of 53% in 1988/89 before shrinking to 33%. The share of manufacturing fluctuated, reflecting to a considerable extent the impact of drought on the rate of slaughter of cattle.[5] In the meantime, other manufacturing increased its share of sectoral output. Government, for its part, had taken an increasingly large role in the economy in recent years.

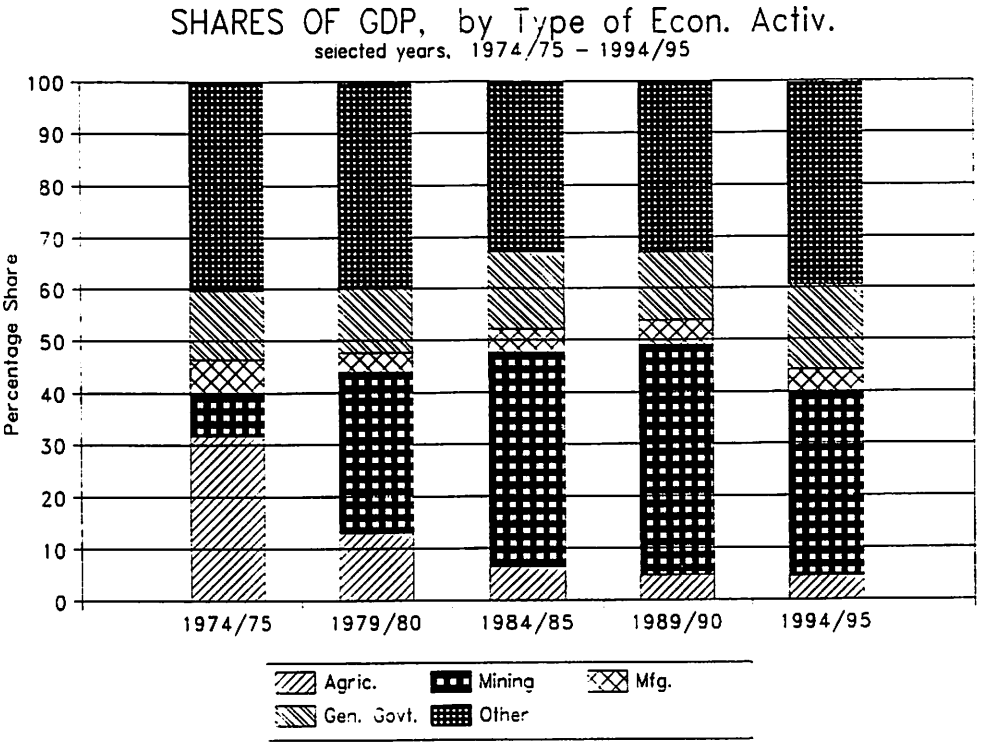

Figure 4

[5] A major but declining share of manufacturing consists of the abattoirs. The throughput is highly dependent on the annual rainfall. At the outset of a drought the slaughter increases to reduce the herd size, but for a multi-year drought subsequent slaughter levels are lower than average because of a smaller stock and poorer feeding. When good rains return the slaughter falls initially, due to restocking of the herd, before recovering to a higher level.

4 Structural Change and Factor Intensities

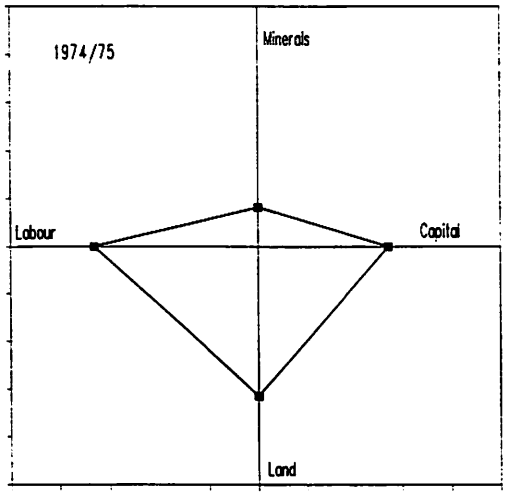

Figure 5.a: 1974/75
% Shares of GDP by Factor Intensity

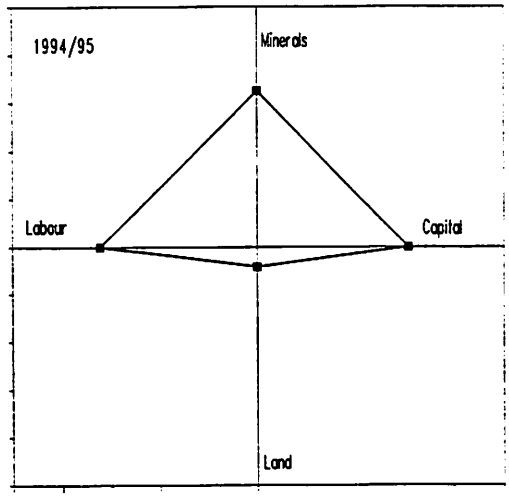

Figure 5.b: 1994/95
% Shares of GDP by Factor Intensity

Note: the dimensions of each box are 100% of GDP along both the horizontal and vertical centre lines.

4.1 The various sectors of the Botswana economy differ sharply in the intensity of their use of the available primary factor inputs of capital, labour, land, and minerals. If we consider intensity of input use, in the sense that a sector uses relatively more of that input per unit of output than the average of all sectors. then we can rank the sectors by degree of input intensity. Obviously, mining is most intensive in the minerals factor, while agriculture is the most intensive in the land input. Government is by far the most labour intensive activity in the economy, with the share of compensation of employees running at about 65% of value added. Manufacturing has from one third to one half of its value added in compensation of employees. The public utilities are generally the most capital intensive.

4.2 Putting the changing share of output together with the factor intensity of the sectors, it is possible to see how the changing structure of production relates to the factor intensity of production. This is seen by considering the "diamond" in Charts 5.a and 5.b, for which the four axes are shares of GDP in the activities which are capital intensive, labour intensive, land intensive, and minerals

intensive.[6] The diamond for 1974/75 is shown in Figure 5.a, while the diamond for 1993/94 is shown in Figure 5.b. There has been a dramatic shift from land intensive to mineral intensive production. The Botswana economy has thus become relatively less concentrated on land intensive activities and much more concentrated on mineral resource intensive activities. There has been virtually no change between capital-intensive versus labour-intensive activities. The growing share of Government in the economy offset the declining share of the construction and manufacturing sectors, all of which are labour intensive.

5 Total Factor Productivity

5.1 Having traced what has been happening to both inputs and outputs in recent decades, we now consider what has been happening to the relationship between inputs and outputs -- i.e., productivity. The best overall measure of this is "total factor productivity" (TFP) growth, which takes into account the fact that part of the increased output is attributable to increases in the various inputs. The TFP measure does this by calculating the gap between the rate of growth of output and the weighted average rate of growth of the inputs. Other measures, such as the incremental capital output ratio, do not take into account the effect of changes in other inputs. At the same time it should be recognised that the total factor productivity approach does not measure productivity directly, but rather as a residual.[7]

5.2 One issue encountered in measuring TFP growth in Botswana is that there is no measure of capacity utilisation of the capital stock, or, until recently, no annual measure of unemployment. Thus, the measures reported here should be thought of as comparing actual output growth with growth of potential inputs. If we were able to adjust for underutilised inputs, such as unemployment of labour or underutilised capital, as long as these influences do not display a secular trend, there would be some year to year variation in the total factor productivity recorded below, but the overall trend of total factor productivity would remain much the same.

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[6] The GDP share data are from the C.S.O., National Income Accounts, while the relative factor intensity data are from the C.S.O., Social Accounting Matrices for 1985/86 and 1992/93. There are no changes in relative factor intensity of sectors between the two years. The labour-intensive sectors are manufacturing, construction, trading hotels and restaurants, government, and social and personal services.

[7] One consequence of this approach is that the measure of total factor productivity growth contains the errors of measurement of both the output and the inputs, which may be either compensating or offsetting.

5.3 Part of GDP is attributable to mineral rents, and not labour and capital inputs. But if we are taking into account only the labour and capital inputs, the measure of output should exclude the mineral rents. Mineral revenues to Government have been used as an approximation of the mineral rents, and thus have been deducted from real GDP before calculating real output. From the mid 1980s onwards, the difference between the measure of real output including and excluding mineral rents was significant. (See Figure 3.)

5.4 Inputs of labour, and similarly capital, are often treated as uniform or undifferentiated, implicitly assuming that each additional input is identical to all previous inputs of that factor. If, however, the composition of the labour force, or of the capital stock, is changing substantially over time, it is important to distinguish subcategories of inputs. In the Botswana context, a significant part of the increased productivity recorded over the period to 1993/94 is due to improved quality of the labour force. One approach to sorting out the influence of the subcategories of inputs is to divide the labour force between skilled and unskilled on the basis of whether or not the individuals had completed more than primary school. The factor shares of skilled versus unskilled labour reported in Table 2 permit a differentiation between the growth of the educated/skilled labour force and growth of the lesser educated/unskilled labour force. Unfortunately, it has not been possible to carry out a similar exercise to incorporate the improved health status of the labour force or to differentiate different categories of capital. (For details of the calculations, see Appendix.)

5.5 The results of the TFP growth calculations are reported in Table 3. The picture over the two decades, 1974/75 to 1994/95, is reported in the final column. The real growth of GDP less mineral rents was 8.5% per annum. The average annual growth rates of the inputs of capital, skilled labour, and unskilled labour were 7.3%, 7.7% and 1.2% respectively. The input shares (Table 2) can be used to calculate the weighted average growth rate of inputs of 6.3%. This leaves a TFP growth rate of 2.2%.

Table 3:

Total Factor Productivity Growth, 1974/5 to 1993/4

	Share	Growth Rate 1974/5 to 1984/5	Growth Rate 1984/5 to 1994/5	Growth Rate 1974/5 to 1994/5
Real Output	1.000	9.4	7.6	8.5
Capital Stock	.404	6.2	8.5	7.3
Labour Force:	.596	2.2	3.4	2.8
Skilled	.391	6.9	8.5	7.7
Unskilled	.205	0.9	1.6	1.2
Total Factor Productivity Growth:				
Undifferentiated Lab. Force		5.6	2.6	3.8
Differentiated Lab. Force		4.0	0.5	2.2

Source: Appendix.

5.6 The TFP growth rate for the two decades is similar to the rates sustained by very fast growing Asian countries over somewhat longer periods: Hong Kong (2.3%, 1961-1991) and Taiwan (2.1%, 1966-1990). Botswana's TFP growth of 2.2% for the past two decades is thus certainly high by international standards.[8]

5.7 To see the importance of taking into account the differentiated labour force growth, the calculations can be redone simply using the rate of growth of the labour force as a whole in Table 3 of 2.8%. This yields a TFP growth rate of 3.8%. The difference between the two calculations may be interpreted as showing that the improved educational status of the labour force contributed on average 1.6% per annum to Botswana's growth rate.

[8] The total factor productivity growth for Hong Kong and Taiwan are taken from A. Young (1995), "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience," Quarterly Journal of Economics, Vol. CX (August), pp. 641-680.

5.8 Looking at the past two decades as a whole hides some significant variation over time. The yearly evolution of TFP growth (taking into account the differentiation of the labour force between skilled and unskilled) is traced in Chart 6. Because of erratic annual swings in the series, the chart also shows a three year moving average. What is particularly notable is the decline of total factor productivity growth in the 1980s, followed by some recovery[9], and then a decline again in the 1990s. The decline in the 1980s reflects the fact that considerable infrastructure was being put in place without a corresponding immediate increase in real output.

5.9 Taking the period 1974/5 to 1984/5 (Table 3, column 2) as a whole reveals a remarkably rapid growth of total output of 9.4% per annum; all the more so when it is recalled that the measure of output excludes mineral rents. During this period, the capital stock grew at 6.2% while the skilled labour force grew at 6.9%, and the unskilled labour force at only 0.9%. The resulting TFP growth rate for that decade was an exceptional 5.3% per annum.

5.10 The TFP growth data for the most recent decade (Table 3, column 3) show quite a different story. While the output growth rate, on average, was very rapid by international standards at 7.6%, over 90% of that growth was brought about by increases in factor inputs of skilled labour, capital, and unskilled labour. Less than 10% of the growth was attributable to increases in productivity.

6 Inter-relationships Among Growth and Structural Transformation

6.1 The foregoing analysis has shown that inputs of skilled labour and capital have grown very rapidly, yielding even more rapid growth of output. However, the contrast between the latest decade and the preceding decade is striking: from 1974/75 to 1984/85 productivity was growing very rapidly, while from 1984/85 to 1994/95 on average the rate of growth of productivity was much slower.

6.2 A careful look at the major shifts in share of GDP (Figure 4) reveals that the major change in the structure of the economy occurred in the earlier period (from 1974/75 to 1984/85), when the agricultural and the mineral sectors switched places in terms of shares of output. This had important implications for productivity growth. The economy was able to reduce sharply the share of output of a

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[9] The sharp upward spike in 1987/88 is in part the result of the sale in July 1987 of the diamond stockpile which had been accumulated from 1982 during which production exceeded the sales quota. In addition, some subsequent discontinuities in diamond sales resulted in unusually large sales in 1988/89.

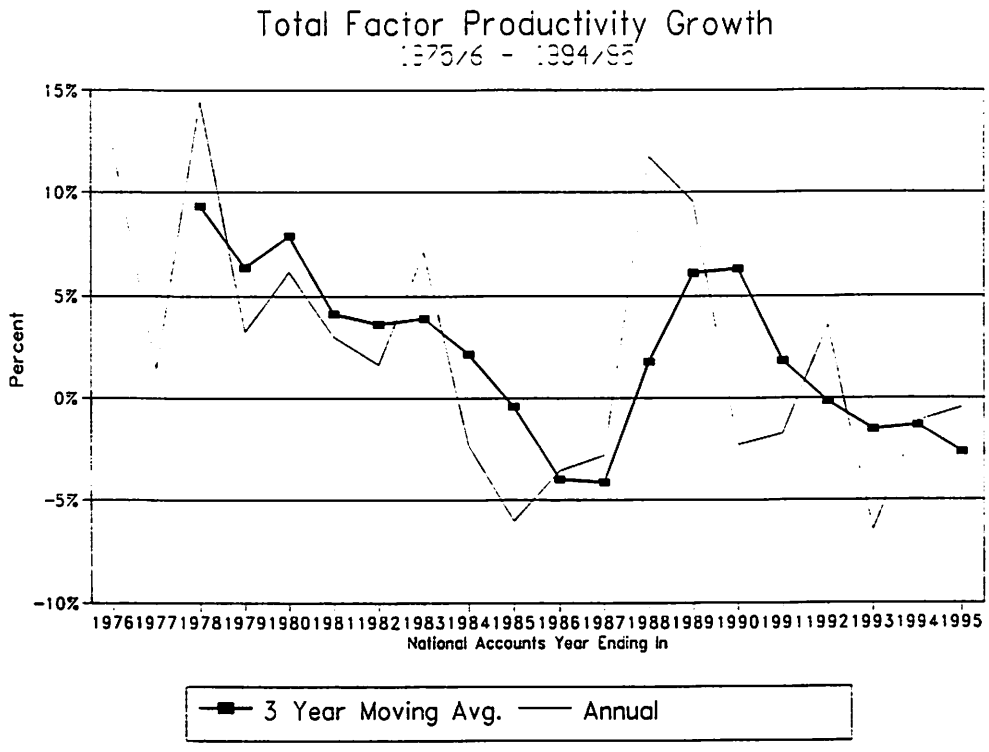

Figure 6

sector which is widely acknowledged as exhibiting on average very low productivity, namely agriculture. At the same time, there was a sharp increase in the share of output in the minerals sector which generally has high productivity (even after deducting the mineral rents).[10] This switch in itself contributed in a major way to the rapid growth of total factor productivity over the 1974/75 to 1984/85 decade.

6.3 The sectoral shift worked in the other direction however, in the decade from 1984/85 to 1994/95. The share of the economy attributable to the minerals sector actually fell from 1984/85 to 1994/95. Furthermore, during this decade, the share of Government in GDP rose. Since the calculation

[10] One measure of the absolute differences in productivity is sectoral GDP per employee. This can be calculated at census years, using sectoral employment from the census, and GDP per sector from the national income accounts. Such a comparison, reported in Bank of Botswana, Annual Report, 1995, Chart V.4, shows a dramatic difference between GDP per employee in agriculture and industry, with the latter approximately four times the former.

of Government in GDP involves measuring output by the value of the inputs, there is by definition no change in productivity in this sector. For both these reasons, the productivity gain arising from changes in sectoral composition which had contributed to the spectacular productivity growth of the earlier decade was not present in the later decade.

6.4 Another unique feature of the structural transformation was that it did not place undue pressure on scarce factor inputs. The big change, as shown in Figure 5, was from activities intensive in land to activities intensive in minerals. This reduced the share of land rents and increased the share of mineral rents, but it did very little to create pressures on the returns to other factors.

6.5 The major shortage associated with this exceptionally rapid growth was of some highly skilled workers which the economy was not able to produce fast enough. To meet the needs of the economy, reliance was placed on expatriate workers. Even into the 1990s, this was an important safety valve for the economy as non-Batswana accounted for over 2.5% of the cash employees.[11]

7 Policies

7.1 Various policies contributed to the outcomes described above. It is convenient to think in terms of three different types of policies: (1) those which affected the supply of inputs; (2) those which affected the quality of inputs; and (3) those which affected the relationship between inputs and outputs, namely productivity.

7.2 Supply of Inputs

7.2.1 The supply of inputs includes both primary factors, and various purchased goods and services. As shown in Figure 1, the most spectacular increase occurred in the capital stock. This was made possible through several related policies.

7.2.2 The openness of the Botswana economy was a major contributing factor in the rapid growth of the capital stock. The policy of remaining in SACU after Independence meant that Botswana was

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[11] The 1991 census reported 304,567 persons working for cash (as distinct from those paid in kind). In March of that year there were 5,578 work permit holders (private sector), and in April of that year central Government employed 2,314 non-Batswana. See C.S.O., Statistical Bulletin, June 1995.

restrained from pursuing the extreme forms of import substituting industrialisation which many other African countries followed in their post-Independence periods. In addition, the exchange rate policy pursued after the Pula was established as an separate currency in 1976, avoided the common pitfall of an overvalued currency and the associated shortage of imports. Together these policies meant that Botswana had an ample supply of imported investment goods available.

7.2.3 The rapid capital stock accumulation was financed initially by a combination of foreign direct investment and donor financing of major infrastructure projects, and later, to a substantial degree, by Government's own saving. Each of these sources required an appropriate policy thrust. The private foreign direct investment, mostly in the mineral sector, required policies which provided reasonable returns to both the foreign investor and the nation. Donor financing required careful cost-benefit analysis of major development projects, a willingness to commit to sound macroeconomic policies, and often required covenants which limited distortions such as underpricing of public utilities. Government's own savings were accumulated largely due to the continuation of disciplined spending, strongly guided by clear national development plans, in the face of exceptionally rapid growth of revenues, particularly mineral revenues.

7.2.4 The growth of the labour force was also affected by policy over the long run in various ways. Policies which improved health status, such as reduced infant mortality and increased life expectancy, directly increased the growth of the economically active population. Meanwhile the lack of an aggressive population policy meant that the demographic transition to a lower birth rate, in light of the lower death rate, was slow in coming.

7.2.5 Policies concerning outflows and inflows of labour had a bearing on the size of the labour force at the margin. In the early post-Independence period, continuation of the policy of facilitating employment of Batswana in South African mines meant that the excess supply of labour was reduced. Later, as the mining sector developed in Botswana, some of these experienced miners returned home.

7.2.6 The policy of easing shortages of skilled labour by employing expatriates served to alleviate bottlenecks, and obviated the dissipation of mineral rents into quasi-rents for particular skills in short supply. In the short run this clearly worked. However, it also meant that the labour market was not putting out signals to bring about an alleviation of those shortages. As a result, the absolute size of the expatriate segment of the labour force has been growing in both numbers and cost, with little immediate prospect of reduction.

7.2.7 Government also acted in the early post-Independence period to facilitate the provision of essential services such as housing, telephones, water, electricity, and transportation by setting up Government departments and/or parastatals. Such provisions were indeed indispensable to the rapid early growth of the economy. However, as the years passed, the lack of market discipline in the provision some (but not all) of these services has imposed significant excess costs on the rest of the economy. Not only are their charges higher than necessary, but some have become bottlenecks due to delays in providing services or in the introduction of modern technologies.

7.3 Quality of Inputs

7.3.1 The major effect of policy on the quality of inputs has been the heavy investment in education and health which has yielded a substantial improvement in the health status and education of the labour force. As noted above, both recurrent and capital expenditures in these areas have been considerable.

7.3.2 In addition to the effect of policy on the quality of the labour force, somewhat more subtly, the lack of import restrictions and associated regulations has enabled Botswana to acquire the latest technology when purchasing imported capital equipment, and when attracting foreign investment. This benefit of an open economy policy has been offset to some extent by Botswana's membership SACU. The restrictive tariff policy pursued by South Africa, particularly during the sanctions era, has meant that many of the durable goods available in Botswana have not been the most up to date technology.

7.4 Productivity

7.4.1 Productivity has been favourably affected in many parts of the Botswana economy by the policy of openness to foreign competition. Many sectors have had to face the discipline of foreign competition, either because they must compete selling in international markets, or because their production must contend with foreign competition in the domestic market. As a consequence, they have had to achieve improvements in productivity in line with that occurring elsewhere in the world.

7.4.2 Other sectors of the economy, however, have not had to face such discipline, and as a consequence their productivity has lagged. This has been particularly true in those sectors which for one reason or another have been sheltered from foreign competition, including Government. In the latter case, as Government became less dependent on foreign donor financing for its development

projects, the discipline of careful ex-ante cost benefit analysis of projects was muted. Marginal projects were approved, and when costs escalated, turning once high return projects into low or even negative return projects, the original approval was seldom re-evaluated.

7.4.3 Low productivity was not confined to the public sector. Marginal private sector projects were made feasible by the policy of negative real interest rates pursued from the mid 1980s through to the early 1990s. Overall then, the falling productivity of investment in protected sectors of the Botswana economy has been a major contributing factor to the decline in total factor productivity.

8 Conclusion

8.1 This review of Botswana's experience -- of rapid economic growth over the first twenty-five years of Independence, followed by the somewhat slower growth in the 1990s -- reveals a complex combination of influences at work. While the discovery and exploitation of mineral deposits was the initiating force, there were many other influences at work individually, and in combination with each other.

8.2 The opening up of major rich mineral deposits began the process. In turn, the capital stock and labour force grew very rapidly in both quantity and quality. These factor supply increases did not flow uniformly into all sectors of the economy. Following the increase in mineral output, the Government and service sectors were the major growth nodes, while in relative terms the agricultural sector declined. This combination meant that the major change in the factor intensity of the economy was simply the switch from one natural resource type of input, land, to another, mineral deposits. Readily available capital and labour did not constrain output growth either sectorally or in aggregate. Given the significant differences in absolute levels of productivity between sectors, (and substantial differences in productivity growth across sectors) the changes in composition of output had a dramatic effect on the total factor productivity growth.

8.3 Many of these changes were profoundly shaped by a wide-ranging set of policies which impacted on the economy. Policies contributed to the rapid growth by bearing on the quantity and quality of primary factors, the composition of output, the factor intensity of output, and the rate of growth of productivity in various sectors.

8.4 With the changing circumstances, however, the influence of a given set of policies is altered. Policies which are initially growth inducing, gradually became less effective in stimulating further growth. This occurred in several ways. For example, in the early years after Independence an expanding role for Government and its parastatal enterprises was undoubtedly growth-inducing, whereas in the present circumstances the opposite is almost certainly true. Similarly, in the early years high rates of investment in physical capital generated rapid economic growth because of the high productivity of those investments, whereas today such investment rates are yielding far less growth because of the low productivity of many of those investments. The future growth of the Botswana economy will thus depend critically on how the policies pursued in the past are altered to meet the changing circumstances.

APPENDIX

Factor Inputs and Output: Data Sources and Methods

1. Consider the inputs of capital, skilled labour, and unskilled labour, and output of GDP less mineral rents.

2. The capital stock series was derived employing a perpetual inventory approach, with additions via gross fixed capital formation and deductions from depreciation. Since there was not any benchmark capital stock measure, an initial capital/output ratio for 1974/75 of 2.72, equal to South Africa's for 1975, was assumed. Gross fixed capital formation and depreciation in current prices were drawn from the CSO, national income accounts, and deflated using the GDP deflator, as a consistent deflator for the components was not available for the entire period.

3. The labour inputs were derived using the labour force from the population census of 1964, 1981, and 1991. The intervening years were interpolated, using the annual growth rate. For the years 1992 to 1995, the growth rate of the decade to 1991 was assumed to continue. The 1971 census data were not used because of significant under-enumeration.

4. The unskilled proportion of the population at each census was taken as a proxy for the proportion of the labour force. Those who never attended school, and who did not complete primary school were classed as unskilled, and the remainder treated as skilled.

5. The output series was GDP less Government's mineral revenues, deflated using the GDP deflator. GDP and its deflator were from the CSO, national income accounts, and while mineral revenues were from MFDP, Financial Statements, Tables and Estimates of Consolidated and Development Fund Revenues.

6. The factor shares were from the CSO, Social Accounting Matrix, 1985/86 and 1992/93. In calculating the factor shares, the mineral revenues noted in paragraph 5 were deducted from the net operating surplus of the mining sector.

Factor Inputs and Output, 1974/5 to 1994/95 (1985/86 prices)

NA Year ending in	GDP (P, millions)	GDP - Mineral Rents (P, millions)	K Stock (P, millions)	Labour Force (persons)	Skilled Labour (persons)	Unskilled Labour (persons)
1975	746	706	2029	290844	46906	242568
1976	888	823	2134	294812	49690	243657
1977	919	870	2229	298833	52640	244752
1978	1098	1024	2283	302909	55765	245851
1979	1207	1104	2405	307041	59075	246955
1980	1380	1232	2579	311230	62581	248065
1981	1511	1347	2831	315475	66296	249179
1982	1624	1475	3126	326236	71904	253151
1983	1884	1683	3386	337365	77986	257186
1984	2101	1739	3558	348873	84583	261286
1985	2252	1725	3700	360773	91738	265451
1986	2421	1774	3954	373080	99499	269683
1987	2636	1799	4016	385806	107915	273981
1988	3039	2116	4238	398966	117044	278349
1989	3437	2476	4644	412576	126945	282786
1990	3634	2627	5192	426649	137683	287294
1991	3955	2837	5978	441203	149330	291873
1992	4210	3195	6775	456253	161962	296526
1993	4196	3223	7389	471817	175662	301253
1994	4366	3395	7913	487911	190521	306055
1995	4502	3578	8353	504554	206638	310934